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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,386	12/21/2001	Richard Y. Chen	US 010700	4894

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EXAMINER	
WONG, ALLEN C	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/028,386	CHEN ET AL.	
	Examiner	Art Unit	
	Allen Wong	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-8 and 10-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-8 and 10-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/3/05 have been fully read and considered but they are not persuasive.

Regarding lines 4-5 on page 8 of applicant's remarks, applicant states that neither Wu nor Mishima as a whole teaches or suggests providing a plurality of DCT modules of different precision. The examiner respectfully disagrees. Miishima's fig.50B discloses the use of multiple DCT modules 77 with a selection means 79 for selecting one of the appropriate DCT module from the plurality of DCT modules, wherein each DCT 77 comprises its own precision. Now if Mishima's DCT elements 77 were all of the same precision, as applicant argued in last paragraph on page 7 of applicant's remarks, what would be the point of having the selection of one of the multiple DCT elements 77 since the DCTs are all of the same precision? If the DCTs 77 were all the same precision, then there would only be one DCT needed to perform the discrete cosine operation to discretely encode image data as shown in Mishima's fig.50A. However, obviously, one of ordinary skill in the art would clearly see that Mishima's fig.50B provides another embodiment of utilizing multiple DCT circuits with each DCT circuit implementing a different precision.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the

references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality, as disclosed in Mishima's col.6, ln.7-19.

Regarding lines 8-11 on page 8 of applicant's remarks, applicant asserts that there is no motivation to combine the teachings of De Bonet in view of Strongin. The examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Strongin's plural IDCT modules and selection means into De Bonet's enhancement layer decoder module for producing means for receiving an enhancement layer video

stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules so as to reduce the computational burden of the video decoding by selecting a highly efficient inverse discrete cosine transform which is optimized for particular picture characteristics, as disclosed in Strongin's col.4, ln.1-5.

Further, the combination of De Bonet and Strongin is considered reasonable because both teachings pertain to the same MPEG video encoding/decoding environment (De Bonet's fig.6 and Strongin's col.8, ln.8-11). Thus, since both De Bonet and Strongin are used in the same MPEG environment, one of ordinary skill in the art would acknowledge that De Bonet and Strongin are considered to be analogous art and thus, they are combinable and usable together. The combination is valid and can be used for obviation to obtain the present invention as disclosed in claims 12-21.

Regarding line 21 on page 8 to line 5 on page 9 of applicant's remarks, applicant states that Strongin fails to teach the many features, ie. "based on available level of computational resources", "preferred bit rate", "required quality level", or "communication bandwidth". The examiner respectfully disagrees. Strongin teaches the selection means selects one of the IDCT modules based on one of the group consisting of: an available level of computing resources (col.13, ln.33-65). Strongin suggests that since video data is encoded using the MPEG standard, the picture data is encoded utilizing prediction, wherein the prediction of data utilizes the computational resources during the encoding/decoding processes, as disclosed in col.13, ln.42-46. Strongin teaches the selection means selects one of the IDCT modules based on

an encoding bit rate (col.13, ln.33-65). Strongin discloses that since the MPEG standard is used, the picture data is predicted wherein the video data uses the well known predictive schemes such as the buffer rate control to monitor the buffer and constantly updating the encoding bit rate. Strongin teaches the selection means selects one of the IDCT modules based on a required quality level (col.13, ln.33-65). Strongin discloses that since the MPEG standard is used, the picture data is predicted wherein the video data uses the well known predictive schemes such as the buffer rate control to monitor the buffer and constantly updating the encoding bit rate to ensure the best possible image quality to meet the required quality levels, via a VBV (video buffer verifier) used for ensuring MPEG video encoding quality of image data.

Strongin teaches the selection means selects one of the IDCT modules based on a decoder capability (col.13, ln.33-39) and bandwidth availability (col.13, ln.33-65; note selection circuit 640 selects the optimum IDCT unit based on the precision that each IDCT has, in that the bandwidth, quality level, computing resources, encoding bit rate and decoder capacity are taken into account before the IDCT selection circuit 640 chooses the optimum IDCT module for preparation of decoding image data for viewing). Strongin discloses that since the MPEG standard is used, the picture data is predicted wherein the video data uses the well known predictive schemes such as the buffer rate control to monitor the buffer and constantly updating the encoding bit rate to ensure the best possible image quality to meet the required quality levels, via a VBV (video buffer verifier) used for ensuring MPEG video encoding quality of image data that also checks

the decoding or receiving end to ensure that the communication bandwidth is available for transmission of the image data in an accurate, efficient manner.

Accordingly, the combination of De Bonet and Strongin meets the broad limitations of claims 12-21 as elucidated above.

Thus, the rejection of claims 1, 3-8 and 10-21 is sustained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (6,614,936) in view of Mishima (5,488,418).

Regarding claims 1, 8 and 11, Wu discloses a program product stored on a recordable medium for encoding a layered video signal, the program product comprising:

means for receiving a video signal and outputting an encoded base layer stream (fig.9, element 82); and

means for encoding an enhancement layer (fig.9, element 84).

Although Wu does not specifically disclose wherein the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules, however, Mishima teaches the use of a plurality of discrete cosine transform (DCT) modules and selection means for

selecting one of the DCT modules (fig.50B, Mishima discloses the use of multiple DCT modules 77 with a selection means 79 for selecting one of the appropriate DCT module from the plurality of DCT modules). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality (Mishima col.6, ln.7-19).

Wu does not specifically disclose wherein each of the plurality of DCT modules comprises a different precision. However, Mishima teaches the use of a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules (fig.50B, Mishima discloses the use of multiple DCT modules 77 with a selection means 79 for selecting one of the appropriate DCT module from the plurality of DCT modules, wherein each DCT 77 comprises its own precision). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality (Mishima col.6, ln.7-19).

Regarding claims 3-7 and 10, Wu does not specifically disclose wherein the selection means selects one of the DCT modules based on one of the group consisting of: an available level of computing resources; an encoding bit rate; a required quality level; a decoder capability; and bandwidth availability. However, Mishima teaches wherein the selection means selects one of the DCT modules based on one of the group consisting of: an available level of computing resources (col.24, ln.23-33); an encoding bit rate (col.24, ln.23-33); a required quality level (col.24, ln.23-33); a decoder capability (col.24, ln.23-33); and bandwidth availability (col.24, ln.23-33). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality (Mishima col.6, ln.7-19).

3. Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Bonet (6,510,177) in view of Strongin (5,872,866).

Regarding claims 12, 18 and 21, De Bonet discloses a program product stored on a recordable medium for decoding a layered video stream, comprising:

means for receiving and decoding a base layer video stream (fig.2, element 270); and

means for receiving an enhancement layer video stream and generating a decoded enhanced video output (fig.2, element 280 is the enhancement layer decoder and note the enhanced video output is displayed on monitor 290).

Although De Bonet does not specifically disclose wherein the enhancement layer decoding means or means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules. However, Strongin teaches the use of a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules (fig.6, elements 650-653 are the plural IDCT modules and element 640 is the selection means for selecting one of the IDCT modules). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Strongin's plural IDCT modules and selection means into De Bonet's enhancement layer decoder module for producing means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules so as to reduce the computational burden of the video decoding by selecting a highly efficient inverse discrete cosine transform which is optimized for particular picture characteristics (Strongin col.4, ln.1-5).

Regarding claims 13 and 19, De Bonet does not specifically disclose wherein each of the plurality of IDCT modules comprises a different precision. However, Strongin teaches wherein each of the plurality of IDCT modules comprises a different precision (col.13, ln.33-39; note selection circuit 640 selects the optimum IDCT unit

based on the precision that each IDCT has). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Strongin's plural IDCT modules and selection means into De Bonet's enhancement layer decoder module for producing means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules so as to reduce the computational burden of the video decoding by selecting a highly efficient inverse discrete cosine transform which is optimized for particular picture characteristics (Strongin col.4, ln.1-5).

Regarding claims 14-17 and 20, De Bonet does not specifically disclose wherein the selection means selects one of the IDCT modules based on one of the group consisting of: an available level of computing resources; an encoding bit rate; and a required quality level; a decoder capability; and bandwidth availability. However, Strongin teaches the selection means selects one of the IDCT modules based on one of the group consisting of: an available level of computing resources (col.13, ln.33-39); an encoding bit rate (col.13, ln.33-39); and a required quality level (col.13, ln.33-39); a decoder capability (col.13, ln.33-39); and bandwidth availability (col.13, ln.33-65; note selection circuit 640 selects the optimum IDCT unit based on the precision that each IDCT has, in that the bandwidth, quality level, computing resources, encoding bit rate and decoder capacity are taken into account before the IDCT selection circuit 640 chooses the optimum IDCT module for preparation of decoding image data for viewing). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Strongin's plural IDCT modules and selection means into De

Bonet's enhancement layer decoder module for producing means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules so as to reduce the computational burden of the video decoding by selecting a highly efficient inverse discrete cosine transform which is optimized for particular picture characteristics (Strongin col.4, ln.1-5).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Allen Wong
Primary Examiner
Art Unit 2613

AW
5/5/05